

Remarks

Claims 1-27 are pending. Please amend claims 16 and 17 as shown on the attached claims listing. Support for the amendment to claims 16 and 17 may be found in the application specification at page 2, line 30 to page 3, line 20; page 14, line 29 to page 15, line 23; and page 24, line 3 to page 25, line 2. No new matter has been added.

Applicants appreciate the acknowledgement of allowable subject matter in claims 1 – 15 in view of the Board Decision dated 9/28/05.

Applicants would also like to draw the attention of the Examiner to the fact that a supplementary IDS will be submitted, via U.S. Mail, and relating to references cited by the Japanese examiner in the related co-pending Japanese Patent Application.

Pursuant to 37 C.F.R. § 1.114, reconsideration of the present application in view of the foregoing amendments and following remarks is respectfully requested.

1. Regarding Examiner's rejection of claims 16 – 27 in view of Milding

By way of the Office Action mailed May 10, 2006, claims 16 - 27, stand rejected under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103 as allegedly being obvious to one of ordinary skill in the art at the time the invention was made and thus unpatentable over PCT Patent Application Publication WO 96/06222 to Milding et al. (hereinafter referred to as Milding). This rejection is respectfully traversed to the extent that it may apply to the present claims.

Milding discloses a nonwoven material produced by hydroentangling a fiber web including recycled fibers that are mechanically freed from nonwoven waste (abstract). Milding teaches that the recycled fibers can be recycled by mechanical shredding of the waste, whereby the material is cut into small bits that, with the help of spiked rollers, are torn

up so that the fibers are freed (Milding, page 3, lines 18-21). The mechanical tearing of the waste material by the process of Milding is often incomplete such that the recycled fibers are present partly in the form of flocks, which Milding points out produces **desirable** non-uniformities in materials made from such recycled fibers (Milding, page 4, lines 20 – 29).

Milding does not teach or suggest a material that is substantially free of flocks as claimed in Claim 16. As one skilled in the art would understand, “substantially free of flocks” describes a material having no flocks, except those very few and rare flocks that are inadvertently present due to regular process variability. In fact, Milding **teaches away** from an absence of flocks and instead teaches that such flocks are a product of the Milding process **and provide desirable attributes** to materials made with such flocks.

Additionally, Milding does not teach or suggest a process where mechanically freed fibers may be recycled by suspending discrete pieces of bonded fibrous materials in a liquid and applying mechanical work to the liquid suspension to generate hydraulic pressure and mechanical shear stress conditions sufficient to hydraulically fragment the bonded fibrous materials into fibers and fiber-like components, as taught by claim 1 of the present invention. Thus, Milding does not teach or suggest all of the limitations of claim 16. Therefore, Applicants respectfully submit that the rejection of claim 16 under 35 U.S.C. § 102(b), or alternately under 35 U.S.C. § 103(a), is improper and should be withdrawn.

With regard to claims 17 – 27 of the present invention, Milding does not disclose, teach, or suggest recycled synthetic fibers and fiber-like materials that are substantially free of flocks as set forth in Claim 17. Additionally, Milding also fails to disclose, teach, or suggest recycled synthetic fiber and fiber-like materials having at least one thread element composed of synthetic material including at least one irregular distortion generated by hydraulic fracture of the thread element to separate it from a bonded fibrous material while the bonded fibrous

material is suspended in a liquid as set forth in Claim 17. The Office Action of May 10, 2006 admits that Milding fails to teach an irregular distortion formed by hydraulic fracture, but presumes that such a distortion would be present after the mechanical separation taught in Milding. The Applicants respectfully traverse this presumption.

With the present invention, synthetic fibers are separated in a water/liquid bath which provides a separation process Milding does not provide and provides a resultant recycled fiber that the process of Milding cannot provide. In the present invention, traditional tearing, shredding and slicing operations may be used to reduce bonded fibrous webs into pieces having a size adapted for suspension in a liquid (page 13, line 35 – page 14, line 28). The liquid suspension is then exposed to conditions of hydraulic pressure, shear stress, and/or cavitation forces sufficient to fragment, rupture, burst or disintegrate pieces of bonded fibrous material into synthetic fibers or fiber-like materials having the desired irregular deformations (page 14, line 29 – page 15, line 24; page 18, lines 11 - 24). The conditions of such a process are more aggressive and stringent than those found in conventional pulping operations (page 14, lines 34 – page 15, line 24), including the process of Milдинг. Such conventional processes, as discussed in the background of the specification, produce incomplete fiberization of bonded nonwoven webs so that synthetic recycled fibers are produced along with undesirable bits of fabric or “flocks.” Such flocks are undesirable as they are difficult to process; they reduce the value of the recycled fibers; and they degrade the appearance, strength, uniformity, and other desirable properties of fabrics formed from such recycled fibers. (page 2, line 3 - page 3, line 20).

Contrarily, as stated above, Milding teaches that such flocks are produced by the shredding process of Milding and points out that such flocks are desired in the particular

materials that may be made from such recycled materials produced by the process of Milding.

If the amount of mechanical work as used in the present invention was used to attempt to produce more recycled synthetic fibers in Milding, the amount of energy produced by such increased work would likely melt the thermoplastic material of Milding into unusable clumps of polymer (page 3, lines 15 – 20). The process of Milding would not produce a thread distortion such as a bend, flattened segment or expanded segment; the process of Mil ding would produce threads that are melted together into undesirable melted blobs.

In contrast, the breaking up of the fibers in the liquid suspension of the present invention allows for such increase work without the detrimental effect on the resultant synthetic fibers as the extra energy is absorbed by the liquid. With the present invention, more mechanical work can be done on the synthetic fibrous material in the liquid suspension and recycled synthetic fibers can be produced without undesirable flocks (page 15, lines 11 - 24).

In summary, compared to traditional methods of tearing of Milding, the hydraulic fracturing of the present invention provides recycled synthetic fibers without undesirable flocks. Additionally, the synthetic fibers are separated from each other without heat degradation of the synthetic fibers caused by the mechanical work of the separation, as would likely occur with the traditional mechanical separation process of Milding. The resultant recycled synthetic fibers of the present invention have irregular distortions that are clearly evident as kinks, bends, and/or partial flattening of the recycled fibers, which give the recycled fiber an overall increased surface area. These irregular distortions provide such recycled synthetic fibers with greater utility than 100 percent virgin fibers, with regard to the formation of hydraulically entangled nonwoven fabrics comprising such recycled synthetic

fibers. Therefore, the fibers and their irregular distortions as produced by the hydraulic fracture of the present invention cannot be presumed to be present in the process of Milding.

Thus, as Milding does not teach or suggest all the limitations of independent claim 17 or the claims that depend therefrom, Milding fails to establish a *prima facie* case of anticipation or obviousness. Accordingly, the rejection of claims 17 – 27 under 35 U.S.C. § 102(b), or alternately under 35 U.S.C. § 103(a), is not believed to be warranted and should be withdrawn.

2. Provisional rejection of claims for double patenting

By way of the Office Action mailed December 11, 2003, claims 1 – 27 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting over claims 1 – 20 of copending Application No. 10/012,768 and claims 1 – 20 of copending Application No. 10/012,766. Without commenting on the propriety of this provisional rejection, appropriate terminal disclaimers are submitted with this Amendment to overcome this provisional rejection.

It is believed that the present application is in complete condition for allowance and favorable action, therefore, is respectfully requested. The Examiner is encouraged to call the undersigned at his convenience to resolve any remaining issues.

The undersigned may be reached at: 770-587-8640.

Respectfully submitted,

PALACIO ET AL.

By: /Nathan P. Hendon/

Nathan P. Hendon

Registration No.: 55,848

CERTIFICATE OF TRANSMISSION

I, Nathan P. Hendon, hereby certify that on October 10, 2006 the aforementioned documents are being transmitted to the United States Patent and Trademark Office via electronic submission to the USPTO's Patent Electronic Filing System EFS-Web.

By: /Nathan P. Hendon/

Nathan P. Hendon